U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 50-219/81-16

Docket No. 50-219

License No. DPR-16 Priority -- Category C

Licensee: Jersey Central Power and Light Company

Madison Avenue at Punch Bowl Road

Morristown, New Jersey

Facility Name: Oyster Creek Nuclear Generating Station

Inspection at: Forked River, New Jersey

Inspection conducted: August 4 - September 14, 1981

Inspectors: _____ 9/24/81
J. A. Thomas, Resident Reactor Inspector date signed

_____ date signed

_____ date signed

Approved by: _____ SEP 24 1981
E. G. Greenman, Chief, Reactor Projects Section 2A date signed

Inspection Summary: Inspection on August 4 - September 14, 1981 (Report No. 50-219/81-16)

Areas Inspected: Routine inspection by the resident inspector (92 hours) of: licensee action on previous inspection findings, tours of the facility, log and record reviews, followup of events that occurred during the inspection, in-office LER review, on-site followup, review of periodic and special reports.

Results: Noncompliances - None in five areas, two in two areas. (Failure to continuously monitor dose rate in a high radiation area - detail 3.b.(4); Failure to follow procedures - detail 5.)

DETAILS

1. Persons Contacted

J. Carroll, Director, Oyster Creek Operations
K. Fickeissen, Manager, Plant Engineering
E. Growney, Safety Review Manager
M. Laggart, Supervisor, Licensing
A. Rone, Engineering Manager
W. Stewart, Plant Operations Manager
J. Sullivan, Manager, Operations
D. Turner, Radiological Controls Manager

The inspector also interviewed other licensee personnel during the course of the inspection including management, clerical, maintenance, and operations personnel.

2. Licensee Action on Previous Inspection Findings

(Closed) Inspector Follow Item (219/79-08-04): To reduce bulk of stored items, entire copies of completed surveillance procedures were not being retained. The inspector reviewed the filing of completed surveillances and found that copies of the entire procedures are still not being filed for each completed surveillance. Only the completed data sheets with review signatures are retained. The inspector determined that this is an acceptable practice since a historical file is maintained on all procedures. This allows a reviewer to obtain a list of all procedural steps used to complete a past surveillance.

(Closed) Inspector Follow Item (219/79-12-01): Old Battery breakers are not annunciated in the control room. This item is the subject of Systematic Evaluation Program (SEP) Topic VIII-3.B, "DC Power System Bus Voltage Monitoring and Annunciation". This item will be further reviewed and resolved by completion of the SEP and integrated plant assessment review.

3. Plant Tours

a. Periodic inspection tours of selected plant areas were conducted to verify compliance with Technical Specifications (TS) and the licensee's administrative procedures in the areas of housekeeping and cleanliness, fire protection, radiation control, physical security, and operational control. Areas toured included the following:

-- Control Room

-- Turbine Building

-- Augmented Off-Gas Building

-- New Rad-Waste Building

-- Cooling Water Intake and Dilution Plant Structure

-- Monitoring Change Areas

-- 4160 Volt Switchgear, 460 Volt Switchgear, and Cable Spreading Rooms

-- Diesel Generator Building

-- Battery Rooms

-- Maintenance Work Areas

-- Yard Areas

b. The following observations were made:

(1) Through daily observation of Control Room monitoring instrumentation and annunciators, log review, and direct observation of selected equipment, the inspector verified that systems were in conformance with Technical Specification (TS) Limiting Conditions for Operation (LCO). Applicable portions of the following LCO's which could be verified by control room observation were checked daily:

--	TS 3.1.B	APRM System
--	TS 3.1.C	LPRM System
--	TS 3.2.C	Standby Liquid Control System
--	TS 3.3.A	Pressure Temperature Relations
--	TS 3.3.D	Reactor Coolant System Leakage
--	TS 3.3.F	Recirculation Loop Operability
--	TS 3.4.A	Core Spray System
--	TS 3.4.B	Automatic Depressurization System
--	TS 3.4.C	Containment Spray and Emergency Service Water System
--	TS 3.4.D	Control Rod Drive Hydraulic System
--	TS 3.5.A	Primary Containment
--	TS 3.5.B	Secondary Containment

-- TS 3.7.A Auxiliary Electric Power

-- TS 3.7.C Standby Diesel Generators

-- TS 3.8.A Isolation Condensers

-- TS 3.13.A Relief and Safety Valve Position Indicators

Instrumentation used to verify the above was examined to insure that displayed parameters were within normal and expected limits and that proper correlation existed between redundant instrument channels. Alarmed control room annunciators were reviewed with operators and shift supervisors to verify that the reasons for the alarmed conditions were understood and that the required corrective action was being taken. Systems and components removed from service were reviewed to verify that proper surveillances were performed on redundant systems when required and that system outages did not violate Technical Specification LCO's.

(2) Local plant instrumentation was selectively examined to verify that required instruments were in service and that proper correlation between channels existed. Safety system actuation sensors were examined to insure that maintenance and construction activities in the area did not impair system operability.

(3) Monitoring and Change Areas were observed to ensure that entrances to the radiation controlled area (RCA) were properly posted, personnel entering the RCA were wearing proper dosimetry, and that personnel and materials leaving the RCA were properly monitored for radioactive contamination. The inspector noted that timers had been placed at the two monitoring stations at the RCA exits with posted instructions to start the timers while performing a whole body frisk. Use of the timers ensures that all personnel exiting the RCA perform a minimum of a two minute whole body frisk. Through frequent observations of personnel exiting the RCA, the inspector determined that the licensee's requirement to perform a two minute frisk had been adequately implemented.

(4) During tours of the facility, the inspector made observations to verify that control point procedures were followed, that contamination areas and airborne radioactivity areas were properly posted, that high radiation areas were properly posted and locked when required, and that personnel complied with the requirements of applicable radiation work permits (RWP).

The inspector reviewed the following RWP's for completeness:

-- RWP 127381 dated August 24, 1981, for cable installation for the drywell hydrogen monitoring system.

-- RWP 125181 dated August 15, 1981, for radiological control activities inside the drywell.

-- RWP 129381 dated August 22, 1981, for inspection and repair of the 'A' condensate pump coupling.

-- RWP 119781 dated August 11, 1981, for spent fuel pool cleanup and removal of old fuel storage racks. Associated Radiological Engineering Review (RER) 458-81 dated August 10, 1981 was also reviewed.

-- RWP 122881 dated August 14, 1981 for CRD rebuild area modifications.

-- RWP 137481 dated September 10, 1981 for torus area cleanup and decontamination.

-- RWP 133981 dated September 1, 1981 for general supervisory inspection of RWP areas.

-- RWP 135381 dated September 4, 1981 for spike testing of the TLD's and Self-Reading Dosimeters. Associated RER 263-81 dated April 16, 1981 was also reviewed.

On August 18, 1981 at about 2:30 P.M. the inspector observed an individual entering a locked high radiation area around the fuel pool cooling pumps on the 75 foot elevation of the reactor building. The individual was being monitored by a health physics technician who had unlocked the door and retained custody of the high radiation area key. The technician had remained outside of the high radiation area. The inspector asked the technician what the radiation dose rate was in the area. The technician stated that the dose rate was 20 mrem per hour at the door but was unaware of the dose rates elsewhere within the high radiation area. The inspector noted that neither the technician nor the individual entering the high radiation area had a radiation monitoring device which could continuously indicate the dose rate in the area or a device which could continuously integrate the dose rate and alarm at a pre-set integrated dose. This constitutes noncompliance with Technical Specification 6.13.1 (219/81-16-01).

The health physics technician immediately directed the individual

to exit the high radiation area when the inspector pointed out that there was no means of monitoring the dose rate as required.

A subsequent review of a radiation survey of this area (survey 4520-81 dated May 9, 1981) indicated that the maximum dose rate was 500 mrem per hour. The individual had been in the area for less than five minutes. Based on a check of the individual's self-reading dosimeters, no over exposure occurred as a result of this event. The event was critiqued by the radiological controls manager with the health physics technician and the individual involved. The licensee stated that this event would be reviewed with the radiation protection and operations departments personnel at shift turnover.

(5) Plant housekeeping conditions including general cleanliness, control of material to prevent fire hazards, maintenance of fire barriers, and storage and preservation of equipment were examined. The inspector examined the placement of temporary hoses and extension cords, and the locations of scaffolding erected for maintenance or modification jobs to verify that safety related equipment operability was not impaired.

(6) Equipment Control procedures were examined for proper implementation by verifying that tags were properly filled out, posted, and removed as required, that jumpers were properly installed and removed, and that equipment control logs and records were complete.

The following electrical jumpers were verified to be properly installed:

-- Jumper Check-Off Sheet 78-128 dated October 17, 1978: Jumper 5 on relay 1K1, jumper 6 on relay 1K2, jumper 9 on relay 2K1, jumper 10 on relay 2K2, jumper 7 between terminals 6R-TB1-38 and 39, jumper 8 between terminals 6R-TB1-71 and 72, jumper 11 between terminals 7R-TB1-46 and 72, and jumper 12 between terminals 7R-TB1-45 and 71. These jumpers are the SRM noncoincidence jumpers in the reactor protection system.

-- Jumper Check-Off Sheet 79-157 dated March 21, 1979: Jumper 16 between terminals 4F-TB27-9 and 12. This jumper defeats the low suction pressure trip on the 'A' control rod drive (CRD) pump. The low suction pressure trips on both CRD pumps share a common power supply. Thus loss of this power supply would cause a trip of both CRD pumps. Engineering action has been initiated

to separate the power supplies and eliminate the need for this jumper.

-- Jumper Check-Off Sheet 80-298 dated September 3, 1980: Jumpers 82, 93, 94, 95 and 96 on bank 2 points 16 thru 20 of the multipoint temperature recorder in panel 8R. These jumpers prevent spurious Reactor Vessel Bellows Seal Temperature alarms caused by a faulty recorder.

The inspector reviewed the following cleared jumpers to verify proper removal and restoration of system alignment:

-- Jumper Check-Off Sheet 81-348 dated May 7, 1981, and cleared on May 11, 1981: Jumpers 67, 68, 71 and 76 in panel 11R to prevent closure of drywell sump valves V-22-28 and V-22-29, and drywell equipment drain tank valves V-22-1 and V-22-2 during maintenance. The inspector reviewed plant operating history for the period these jumpers were in place to verify that the plant was in a cold shutdown condition and thus automatic isolation capability of these containment isolation valves was not required.

The inspector reviewed the following cleared system tagging requests to verify proper restoration of system alignment:

-- Outages 81-1084 and 81-1085 initiated on August 17, 1981 and cleared on August 18, 1981: Replacement of Traversing Incore Probe (TIP) circuit breakers under job order 1345V.

-- Outage 81-1091 initiated on August 19, 1981 and cleared on August 18, 1981: Replacement of brushes in the 'A' battery charger MG drive motor.

-- Outage 81-1092 initiated on August 18, 1981 and cleared on August 18, 1981: Main station battery discharge test.

(7) Valves and components in safety related systems were observed to verify proper system alignment. Accessible major flow path valves in the Core Spray, Containment Spray, Control Rod Drive Hydraulic, Emergency Service Water, and Isolation Condenser systems were examined for proper alignment by direct observation and by observation of remote position indicators. All breakers in the 4160 Volt and selected breakers in the 460 Volt and 125 Vdc electrical systems were periodically examined for proper alignment. Systems and components were examined for evidence of abnormal vibration and fluid leaks. Selected pipe hangers and seismic restraints were visually examined for indications of mechanical interference or fluid leaks.

(8) Implementation of the Physical Security Plan was observed in the areas toured. The inspector verified that protected area barriers were not degraded, personnel and packages were checked prior to allowing entry into the protected area, security access controls t vital areas were maintained, and that security posts were adequately manned.

(9) Through frequent observations of the control room, the inspector verified that the manning requirements of 10 CFR 50.55(k) were met. The inspector observed shift turnovers to verify that they were conducted in an orderly manner and that sufficient information was exchanged to insure the continuity of system status.

c. Acceptance criteria for the above areas include the following:

-- Technical Specifications

-- Procedure 106, Conduct of Operations

-- Procedure 108, Equipment Control

-- Procedure 115, Standing Order Control

-- Procedure 119, Housekeeping

-- Procedure 120, Fire Hazards

-- Procedure 122, Security Guidelines for Plant Personnel

-- Procedure 903.2, Personnel Monitoring

-- Procedure 903.6, Personnel Regulations

-- Procedure 915.1, Restriction of Access into Radiation Control Areas

-- Procedure 915.4, Contamination Control

-- Procedure 915.6, Radiation Work Permit

-- Oyster Creek Physical Security Plan

-- 10 CFR 50.54(k)

-- Inspector judgment

4. Shift Logs and Operating Records

a. The inspector reviewed the following plant procedures to determine the licensee established requirements in this area in preparation for review of selected logs and records:

-- Procedure 106, Conduct of Operations;

-- Procedure 108, Equipment Control; and,

-- Procedure 115, Standing Order Control.

The inspector had no questions in this area.

b. Shift logs and operating records were reviewed to verify that:

-- Control Room logs were filled out and signed;

-- Equipment logs were filled out and signed;

-- Log entries involving abnormal conditions provided sufficient detail to communicate equipment status;

-- Shift turnover sheets were filled out, signed, and reviewed;

-- Operating orders did not conflict with Technical Specification requirements; and,

-- Logs and records were maintained in accordance with the procedures in a. above.

c. The review included the following plant shift logs and operating records as indicated, and discussions with licensee personnel. Reviews were conducted on an intermittent selective basis:

-- Control Room Log, all entries;

-- Group Shift Supervisors Log, all entries;

-- Technical Specification Log;

-- Reactor Auxiliary Log;

-- Reactor Log;

-- Control Room Turnover Check List;

-- Reactor Building Tour Sheets;

-- Turbine Building Tour Sheets;

-- Equipment Tagging Log;

-- Lifted Lead and Jumper Log;

-- Defeated Alarm Log;

5. Follow-up of On-Site Events

On September 3, 1981 at about 11:30 A.M. a reactor coolant high conductivity alarm was annunciated in the control room. Initially, chloride contamination was suspected as a result of a previous event involving chloride intrusion into the reactor building closed cooling water system and mechanical failure of two shutdown cooling heat exchangers (this event is documented in NRC inspection 219/81-17). Reactor water samples were taken but no evidence of chloride contamination was found. Subsequent investigation determined that a valve lineup error during performance of core spray system surveillance had allowed a path for the flow of chromated water from the core spray system into the reactor. During the performance of procedure 610.3.005, revision 11, dated May 12, 1981, "Core Spray System Instrument Channel Calibration and Test", personnel errors in implementing the procedure allowed both the parallel isolation valves (V-20-15 and V-20-40) and the system discharge valve (V-20-12) to be open simultaneously. This caused flow from the system fill pump to discharge into the reactor which was in cold shutdown and vented. During normal operation, V-20-15 and V-20-40 are shut with power available for automatic operation. The discharge valve, V-20-12, is normally open with its power supply breaker locked open. The surveillance procedure requires that V-20-12, V-20-15, and V-20-40 be closed with their supply breakers open. The first step of the valve lineup portion of the procedure instructs the operator to shut the discharge valve, V-20-12, and open its breaker. The operator closed the valve but failed to reopen the breaker. The second step of the procedure instructs the operator to open the power supplies breakers for the parallel isolation valves, V-20-15 and V-20-40. The operator misread the procedure and opened the valves instead of the breakers. As V-20-15 and V-20-40 opened, since reactor pressure was less that 285 psig, the logic circuit was satisfied and discharge valve V-20-12 opened automatically allowing the fill pump discharge to flow into the reactor. Failure to follow procedure 610.3.005 constitutes noncompliance (219/81-16-02).

The valve lineup error was corrected and the surveillance procedure was satisfactorily completed. The reactor water cleanup system subsequently removed the chromate contamination and restored reactor water conductivity to normal and the core spray sparger was flushed to the suppression pool to remove the remaining contaminated water. This event was reviewed by station management and the operating experience assessment committee, and was discussed with all operations personnel. The importance of procedural adherence was stressed. The licensee stated that the procedure would be revised to reduce the chance of misreading the procedural steps.

The inspector had no further questions on this item.

6. In Office Review of Licensee Event Reports (LER's)

The inspector reviewed LER's received in the NRC:R1 and Resident Office to verify that details of the event were clearly reported including the accuracy of the description of cause and adequacy of corrective action. The inspector also determined whether further information was required from the licensee, whether generic implications were involved, and whether the event warranted on-site followup. The following LER's were reviewed:

LER	Event
*81-27/3L	Operation in a degraded mode when number two TIP ball valve failed to close automatically.
81-29/3L	Operation in a degraded mode when 'B' control rod drive hydraulic pump motor bearing failed in service.
81-31/3L	Operation in a degraded mode when 'B' electromatic relief valve failed to open during testing.
*81-32/3L	Monthly channel checks of the accident monitoring instrumentation were not performed.
81-33/1T	Violation of secondary containment when both North-West airlock doors were found open.
*81-34/3L	Core peaking factor was 110 percent of allowable limit.
81-35/3L	A degraded fire barrier was discovered between the control room and the cable spreading room.
81-37/3L	Violation of technical specifications when the South-East containment spray compartment door was found open.
81-40/3L	EMRV high pressure sensors IA83B and IA83C setpoints exceeded the specified value.
*81-41/1T	Stack gas activity was not continuously monitored when the 'A' sample pump tripped.
*81-42/1T	Stack gas activity was not continually monitored when the 'B' sample pump tripped.
*81-43/1T	Stack gas activity was not continuously monitored due to air inleakage at the sample pump inlet.

7. On-Site Licensee Event Follow-up

For t se LER's selected for on-site followup, the inspector verified that reporting requirements of Technical Specifications and Regulatory Guide 1.16 had been met, that appropriate corrective action had been taken, that the event was reviewed by the licensee as required by facility procedures, and that continued operation of the facility was conducted in accordance with Technical Specification limits. The LER's selected for on-site followup are denoted by an asterisk (*) in detail 6. above. The following specific observations were made and discussed with licensee management:

81-27/3l and 81-34/3L — The details of these events were reviewed and documented in NRC inspection 219/81-14 conducted July 1 to August 3, 1981. Final corrective action is the subject of unresolved item 219/81-14-04 and will be reviewed in a subsequent inspection.

81-32/3L — The details of this event were reviewed and documented in NRC inspection 219/81-14 conducted July 1 to August 3, 1981. Final corrective actions will be examined following a review of the licensee's response to the subject inspection findings.

81-41/1T, 81-42/1T and 81-43/1T — These three licensee event reports resulted when mechanical failure of the stack gas sampling system caused a loss of continuous monitoring of the activity of gases released through the plant stack. On August 24, 1981, the 'A' sample pump tripped on thermal overlead due to pump binding when the pump's carbon vanes became brittle and failed. Sample flow was restored by starting the standby sample pump. On August 28, 1981, the 'B' sample pump tripped on thermal overload when the pump overheated and caused the pump to bind. Sample flow was restored by starting the 'A' sample pump. On August 29, 1981, stack gases were not monitored when air inleakage on a moisture separator at the sample pump inlet caused a high sample flow signal which closed the sample line flow control valve. The inleakage allowed an erroneous indication of normal sample flow even though a representative sample was not being drawn. When the condition was discovered, sample flow was restored by sealing the leak and opening the flow control valve. During each of these events, the reactor was in a cold shutdown condition with no work being performed on the reactor. Stack Gas Radiation Monitor recorders showed no changes in levels before and after the events, and a review of the reactor building ventilation exhaust monitors showed no increases in levels during the events. Thus, there were no apparent unplanned releases during these events. There have been previous similar occurrences of a similar nature during the last two years indicating an apparent unreliability of the stack gas sample system. The licensee stated that an improved monitoring system is scheduled for completion in early 1982. This area is unresolved pending further review by the NRC (219/81-16-03).

8. Review of Periodic and Special Reports

The following periodic and special reports submitted by the licensee were reviewed by the inspector. The inspector determined that information was reported to the NRC as required, planned corrective action appeared adequate to resolve identified problems and that reported information was valid.

Monthly Operating Data Report --- July, 1981

9. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Paragraph 7 contains an unresolved item.

10. Exit Interview

At periodic intervals during the course of this inspection, meetings were held with senior facility management to discuss inspection scope and findings. Discussions with station management relative to the status of Resident inspection efforts were held on August 6, 11, 17, 18, 27 and September 3, 8, 11, and 14.